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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/868,408	09/25/2001	Robert Moerman	30394-1049	9235
5179	7590	11/22/2004	EXAMINER	
PEACOCK MYERS AND ADAMS P C			LUDLOW, JAN M	
P O BOX 26927			ART UNIT	
ALBUQUERQUE, NM 871256927			PAPER NUMBER	
			1743	

DATE MAILED: 11/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/868,408

Applicant(s)

MOERMAN ET AL.

Examiner

Jan M. Ludlow

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1-8, 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moon et al (2003/0092195).

Moon teaches a method of electrospray transfer from a capillary in the claimed size range at a flow rate in the claimed range and with spacing between the tip and the target in the claimed range [0036]- [0040]. Moon additionally teaches that the electrospray method can be used to deposit material from one microplate to another, for, e.g., proteomic screening ([0144] – [0146] and Figs. 23A-B).

Moon fails to explicitly teach the nozzle size, flow rate and spacing in the electrospray deposition embodiment.

It would have been obvious to perform the electrospray deposition using the parameters taught for electrospray transfer in order to carry out the invention substantially as taught.

5. Claims 9-13, 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moon as applied to claims above, and further in view of Morozov (6,350,609).

6. Moon fails to teach the electrode placement, substrate characteristics or vapor treatment.

7. Morozov teaches a method similar to that of Moon. The substrate carries the counter electrode (Figs. 4A-C) and raised lands 64 of specified properties are used to bind transferred molecules. Wet deposition (Fig. 1B) and processing under vapor are taught. Note that this reference corresponds to WO 98/58745 cited in the International Search Report.

8. It would have been obvious to use the techniques of Morozov in the method of Moon in order to control and enhance deposition as taught.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
10. Pui et al (6093557) corresponding to WO98/56894 cited in the International Search Report does not teach or suggest the instant invention because a spacing of 5mm – 3cm is taught (col. 16, line 10).
11. Mann et al teaches a capillary in the claimed size range operating at a flow rate as claimed spaced 1.5 mm from the counter electrode (col. 4).
12. Ramsey and Karger additionally teach electrospray transfer from a microfluidic device to a substrate.
13. Applicant's arguments filed August 30, 2004 have been fully considered but they are not persuasive.

Applicant argues that "Moon et al. do not utilize electrospray ionization for deposition on surfaces" in paragraph 3 of the response, but then directly contradicts this argument in paragraph 4 of the response by stating that Moon "is directed at spraying multiple droplets at a surface..." Applicant further argues that the present invention is directed to "coating a specific surface with very small spots of a liquid so that no substantial amount of liquid is deposited outside the selected portion." These arguments are not persuasive for the following reasons: Moon teaches that the electrospray method can be used to deposit material from one microplate to another, for, e.g., proteomic screening ([0144] – [0146] and Figs. 23A-B), as clearly stated by the examiner in the previous office action and repeated above. The wells 334 on plate 324 shown in Fig 23A clearly constitute selected portions of a specific surface. Further, the

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claims do not actually require a "specific" surface or "very small spots of a liquid so that no substantial amount of liquid is deposited outside the selected portion."

Applicant further argues that the instant invention is specifically directed to concentrate a liquid on a specific, selected surface, but again, no such limitation is found in the claims.

Applicant argues that neither the result allegedly claimed nor the parameters (which are actually claimed) of claim 1 are taught by Moon, but points to no evidence supporting this statement, whereas the examiner has specifically pointed out the location in the text of Moon where the parameters are taught [0036-0040]. The pertinent portions cited below for applicant's convenience:

[0036] Because the electrospray device is manufactured using reactive-ion etching and other standard semiconductor processing techniques, the dimensions of such a device can be very small, for example, as small as 2 **.mu.m inner diameter** ...

[0040] The electrospray device of the present invention may be placed 1-2 mm or up to 10 mm from the orifice of an API mass spectrometer to establish a stable nanoelectrospray at flow rates as low as **20 nL/min** with a voltage of, for example, 700 V applied to the nozzle and 0-350 V applied to the substrate and/or the planar ejection surface of the silicon microchip.

Note that 2 um inner diameter is less than 150 um as claimed, 1mm spacing is less than 2mm as claimed and 20nl/min (= .33 nl/s) is between 0.01 pl/s and 1ml/s as claimed.

Applicant argues that Morozov is not applicable because Morozov teaches spacings greater than those in the instant invention, but the spacings of the instant claims are taught by Moon.

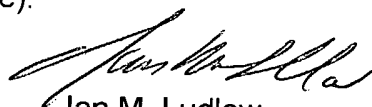
14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jan M. Ludlow whose telephone number is (571) 272-1260. The examiner can normally be reached on Monday-Thursday, 11:30 am - 8:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jan M. Ludlow  
Primary Examiner  
Art Unit 1743

Jml

November 17, 2004